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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/600,847	06/20/2003	Keith C. Hong	008-02	8487
27569	7590	03/02/2006	EXAMINER	
PAUL AND PAUL 2000 MARKET STREET SUITE 2900 PHILADELPHIA, PA 19103			TSOY, ELENA	
			ART UNIT	PAPER NUMBER
			1762	

DATE MAILED: 03/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/600,847	Applicant(s) HONG ET AL.	
	Examiner Elena Tsoy	Art Unit 1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) 26 and 27 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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Request for Reconsideration

Request for Reconsideration filed on 2/06/2006 has been entered. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn. Claims 1-27 remain pending in the application. Claims 26-27 remain being withdrawn from consideration as directed to a non-elected invention.

Declaration under 37 CFR 1.131

The Declaration filed on 2/06/2006 under 37 CFR 1.131 is sufficient to overcome the Joedicke (20040110639) reference. All rejections based on Joedicke '639 have been withdrawn.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-11, 16-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Skadulis (US 3,528,842) in view of Joedicke (US 4,378,408).

Skadulis discloses a process for producing algae-resistant roofing granules, the process comprising applying to raw mineral granules (claimed inert base particles) (See column 3, lines 44-46) a coating composition containing appropriate pigments generally metal oxides (See column 3, lines 30-33) such as TiO₂, kaolin clay, sodium silicate followed by firing at 950⁰F to produce a first coating layer; then applying to pre-coated granules (See column 4, lines 43-48) a

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coating composition containing appropriate pigments generally metal oxides (See column 3, lines 30-33) such as TiO_2 , kaolin clay, sodium silicate and water-insoluble algicidal copper compounds such as Cu_2O (claimed cuprous oxide) in an amount of 2 wt % (See column 4, line 39); then firing the coated granules at 800-1000 °F thereby forming a moisture permeable porous pigmented silicate-clay coating (See Example I; column 2, lines 37-55, 71-72; column 3, lines 1-3, 16-53). The water-insoluble algicidal copper compounds become soluble under acidic conditions and are released from the porous silicate-clay coating in an amount effective to prevent growth of algae on the surfaces (See column 2, lines 55-70).

Skadulis fails to teach that the coating composition further contains a void-forming material, the void-forming material releasing gaseous material at temperatures above 90°C, and having an average particle size no larger than 2 mm, which form pores upon firing (Claims 1, 25).

Joedicke '408 teaches that the addition of inexpensive gas-forming compounds such as hydrogen peroxide, sodium perborate (NaBO_3) to a coating composition containing a pigment such as titanium dioxide (TiO_2), kaolin clay, sodium silicate greatly enhance film opacity and afford significant pigment reductions, *particularly* TiO_2 in whites, where the coating composition is intended to be used as the only coating or as the outer coating on roofing granules, by undergoing chemical and/or thermal decomposition to gaseous products early in the film drying process and resulting in the uniform dispersion of microscopic light-scattering *microvoids* (i.e. gas-forming particles should have claimed particle size of less than 2 mm to produce microvoids) throughout the film (See column 2, lines 17-68; column 3, lines 1-16). Unfortunately, the voids formed by drying neat silicate films are large and scatter light

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inefficiently. In addition, the film is weak because the voids are interconnected and the film surface is extensively disrupted. See column 2, lines 23-27.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have added inexpensive gas-forming compounds such as hydrogen peroxide, sodium perborate (NaBO_3) to a first and second coating compositions for making algicidal roof granules in Skadulis with the expectation of providing algicidal roof granules with the desired enhanced film opacity and significant pigment reductions, as taught by Joedicke '408.

As to pore size, thickness and concentration limitations, It is held that it is not inventive to discover the optimum or workable ranges of result-effective variables by routine experimentation. In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977). See also In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have determined the optimum values of the relevant pore size, thickness and concentration parameters (including those of claimed invention) in Skadulis in view of Joedicke '408 through routine experimentation in the absence of showing of criticality.

3. Claims 9, 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Skadulis in view of Joedicke '408, further in view of McMahon (US 3,507,676).

Skadulis in view of Joedicke '408 are applied here for the same reasons as above. Skadulis in view of Joedicke '408 fails to teach that zinc oxide (ZnO) is used as an algicidal agent.

McMahon teaches that ZnO is suitable for the use as algicide in coating of roofing granules (See column 1, lines 14-15).

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It is held that the selection of a known material based on its suitability for its intended use supported a prima facie obviousness determination in *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used ZnO as algicide in Skadulis in view of Joedicke '408 since McMahon teaches that ZnO is suitable for the use as algicide in coating of roofing granules.

4. Claims 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Skadulis in view of Joedicke '408, further in view of Hojaji et al (US 4,430,108).

Skadulis in view of Joedicke '408 are applied here for the same reasons as above. Skadulis in view of Joedicke '408 fails to teach that sugar is used as gas-forming material.

Hojaji et al teach that sugar is suitable for the use as gas-forming material (See column 8, lines 47-57) in glass compositions for roof shingles (See column 4, lines 19-20).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a sugar as gas-forming material in Skadulis in view of Joedicke '408 since Hojaji et al teach that sugar is suitable for the use as gas-forming material in glass compositions for roof shingles.

Response to Arguments

5. Applicant's arguments with respect to claims 1-25 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elena Tsoy whose telephone number is 571-272-1429. The examiner can normally be reached on Monday-Thursday, 9:00AM - 7:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Elena Tsoy
Primary Examiner
Art Unit 1762

ELENA TSOY
PRIMARY EXAMINER
ETsoy

February 28, 2006